The American College of Obstetricians and Gynecologists

FREQUENTLY ASKED QUESTIONS
FAQ172
PREGNANCY

Cord Blood Banking

What is cord blood?

Cord blood is blood from the baby that is left in the ***umbilical cord*** and ***placenta*** after birth. It contains cells called hematopoietic (blood-forming) stem ***cells*** that can be used to treat some diseases.

What are stem cells?

Most cells can make copies only of themselves. A skin cell can make another skin cell, for example. Stem cells are like blank slates. They can mature into different kinds of cells. The blood-forming stem cells found in cord blood make new blood cells to replace old ones in the body.

How are cord blood stem cells used?

Blood-forming stem cells in cord blood can be used to treat some types of illnesses, such as disorders of the blood, ***immune system***, and ***metabolism***. They also are used to offset the effects that cancer treatments have on the immune system.

Stem cells occur in places other than cord blood. They are found in blood and ***bone marrow*** in adults and children. Using cord blood to treat disease has some benefits over using bone marrow. For example, it is harder to collect bone marrow than it is to collect cord blood. Collecting bone marrow poses some risks and can be painful for the donor.

What are the limits to stem cell use?

Stem cells are not a "miracle cure." Only a few diseases can be treated with stem cells. There also are other limitations:

- If a baby is born with a genetic disease, the stem cells from the cord blood cannot be used for treatment because they will have the same ***genes*** that cause the disorder.
- A child's stem cells cannot be used to treat that child's leukemia, a cancer of the blood. However, stem cells from a healthy child can be used like any other donated organ to treat another child's leukemia. The recipient and donor are carefully matched to make sure that the stem cells will work.

How is cord blood stored?

Cord blood is kept in one of two types of banks: public or private. They differ in important ways that may affect your choice.

How do public cord blood banks operate?

Public cord blood banks operate like blood banks. Cord blood is collected for later use for anyone who needs it. The stem cells in the donated cord blood can be used by any person who "matches." The cord blood is tracked in a database so that a unit can be found quickly when needed. Public banks do not charge to collect cord blood.

Donors to public banks must be screened before birth. Screening entails a detailed medical history of the mother and father and their families. The goal is to learn of any blood or immune system disorders or other problems. Donors also are asked about their lifestyles. Many people will not meet these screening standards.

How do private cord blood banks operate?

Private banks store cord blood for "directed donation." The blood is held for use in treating your baby or relatives. Private banks most often charge a yearly fee for storage. There also will be a fee for collecting the cord blood. Some doctors may have a financial or other conflict of interest in a private bank.

How is cord blood collected?

Cord blood is collected by your health care provider or the staff at the hospital where you give birth. Not all hospitals offer this service. Some charge a separate fee that may or may not be covered by insurance. The process used to collect cord blood is simple and painless. After the baby is born, the umbilical cord is clamped. Blood is drawn from the cord with a needle that has a bag attached. After the bag is sealed, the placenta is delivered. The process takes about 10 minutes.

What are some situations when it is not possible to collect cord blood?

Sometimes, not enough cord blood can be collected. This problem can occur if the baby is premature or if there is more than one baby and they share a placenta. It also can occur for no reason. If an emergency occurs during delivery, it may not be possible to collect cord blood.

Problems with the mother may not allow any cord blood to be collected. These problems make it more likely for cord blood to carry an infection:

- Herpes or genital warts
- Infection of the placenta or amniotic fluid

What should be considered when deciding whether to store cord blood?

There are some points to think about when making a decision about storing cord blood:

- Many diseases cannot be treated with a person's own stem cells.
- The chance that cord blood stem cells will be needed to treat your child or a relative is very low—about 1 in 2,700. However, research is being done into new uses for stem cells. Research also may uncover new ways of treating disease that do not involve stem cells.
- Currently, it is not known how long cord blood can successfully be stored.

If you decide to store cord blood, you will need to choose a cord blood bank. Listed are some questions to ask yourself when deciding on a bank:

- What will happen to the cord blood if a private bank goes out of business?
- Can you afford the collection fee and yearly storage fee for a private bank?
- What are your options if results of the screening tests show you cannot donate to a public bank?

Glossary

Cells: The smallest units of a structure in the body; the building blocks for all parts of the body.

Bone Marrow: The spongy tissue in bone cavities that produces new blood cells.

Genes: DNA "blueprints" that code for specific traits, such as hair and eye color.

Immune System: The body's natural defense system against foreign substances and invading organisms, such as bacteria that cause disease.

Metabolism: The physical and chemical processes in the body that maintain life.

Placenta: Tissue that provides nourishment to and takes waste away from the fetus.

Umbilical Cord: A cordlike structure containing blood vessels that connects the fetus to the placenta.

If you have further questions, contact your obstetrician–gynecologist.

FAQ172: Designed as an aid to patients, this document sets forth current information and opinions related to women's health. The information does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to institution or type of practice, may be appropriate.